

Homework 6

Complex Analysis, MTH 431, Spring 2014

Hand-in Problems Due: Wednesday April 30th 2014

Topics: Chapters 7

1. Compute $\int_{\gamma} \frac{1}{z^2+1} dz$ where $\gamma(t)$ is a circle centered at $2i$ with radius 2.
2. Evaluate $\int_{|z|=2} \frac{e^z}{z(z-3)} dz$.
3. Evaluate $\int_{|z|=1} \frac{\sin z}{z^2} dz$.
4. Evaluate $\int_{|z|=2} \frac{1}{z^2(z-1)^2} dz$
5. Page 125, Exercises 7.1b
6. Obtain the Taylor series expansion of e^z , centered at 1 and state its radius of convergence.